

An aerial photograph of Hurricane Katrina, showing a large, bright, swirling cloud mass over a dark, turbulent ocean. The hurricane's eye is visible as a bright white center. The overall tone is dramatic and somber, reflecting the impact of the storm.

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KATRINA

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Comments

Dwight Landreneau, Secretary

A year ago I wrote about how fortunate the state was to have survived another hurricane season without major damage. As I write this, a major portion of south Louisiana is at the very beginning of an immense recovery effort following two devastating hurricanes.

The damaging effects of Katrina as it moved through the state on Aug. 29 and Rita as it came ashore Sept. 24 are unlike anything this state has experienced in our lifetime or the lifetime of generations before us.

The totals are still being tabulated, but in terms of lives lost and disrupted, homes and businesses destroyed or damaged, and damage to our coastal and inter-coastal wildlife

and fisheries resources, these two natural disasters have altered a way of life for many in south Louisiana.

Coastal Louisiana, aptly referred to as America's WETLAND in the awareness campaign with the same name, was ravaged again and now lies even more exposed to future wind and wave action to be delivered by seasonal climatic changes and storms. There are years of rebuilding ahead and these efforts will include lives and livelihoods, as well as structures.

We can best support those faced with the greatest recovery challenges by lending whatever assistance is available. I saw that willingness to come to the aid of those in need as soon as Katrina had blown through the state. LDWF personnel were in the rescue areas launching boats to bring storm victims to higher ground, support personnel were working to supply those on the front line of search and rescue, and employees with homes intact were taking in those without.

I greatly appreciate the authority granted by Governor Blanco to assign all LDWF assets to the critical search and rescue mission that followed both storms. Additionally, I give credit to the various state and local agency personnel who joined with civilian volunteers and out-of-state agency personnel to bring additional resources to the massive lifesaving effort. You will read a number of behind-the-scenes stories in this issue that illustrate a post-hurricane response that adapted to the task at hand. Our focus is mainly on the Katrina response as publication deadlines limit the Rita response storylines. But the lessons learned in the department's preparation and response to both storms will be used as future threats from the gulf appear.

I am very proud of what was accomplished by this agency in the first response effort and equally proud of the recovery plans under way to get LDWF back in business in those areas where departmental facilities were hit the hardest. Our efforts will continue to support the commercial and recreational fishing and hunting industries as they rebound from Katrina and Rita. Your subscription to this publication indicates an interest in supporting the LDWF mission of natural resource management and conservation. Those whose livelihoods depend on our state's natural resources now need your support more than ever. As commercial fishermen, dealers and processors work to bring their businesses back, your choices as consumers of Louisiana-harvested products can make a difference. That product may not be as readily available for a period of time, but the spirit of those who choose to bring it to market will find a way.

Recreational hunting and fishing businesses and individual guide services in parishes hardest hit by the storms will also be struggling to reconnect with customers. When you attempt to contact those Louisianians, many of whom you may have done business with for years, don't give up if phone calls and e-mails are not answered during this immediate rebuilding period. Call back in a month or two or six and bring your business back so they can recover as the state recovers economically. The projected revenue losses in the near term run into the billions of dollars where wildlife and fisheries resources are concerned. Those resources will recover over time, however. And the inner drive that brings thousands of hunters and fishermen to our woodlands and marshes will not be denied.

We all have an interest in helping our citizens rebound and spreading the word that the Sportsman's Paradise, dealt a crippling blow along the coast, will be whole once again. That's what I hope to write about a year from now.



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Katrina Approaches—12 p.m. CDT 08/28/05

(between 26 and 26.9N and between 88.1 and 89 W Category 5)

Courtesy of MODIS Rapid Response Project at NASA/GSFC

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Brown Pelican (*Pelecanus occidentalis*)

By Joe Mac Hudspeth



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Photo by David McInerney/LDWF Enforcement

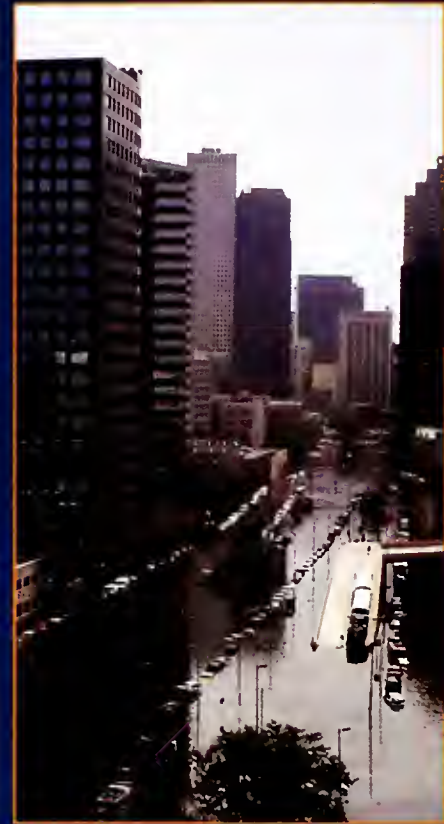


Photo by Maj. Sandy Carver/LDWF Enforcement

Photo by Lt. Henry Brussard/LDWF Enforcement



THE CALL OF *Duty* LDWF SEARCH AND RESCUE

Story by
Adam EINCK

LDWF Enforcement Photo



Photo by Lt. Dennis Buechel/LDWF Enforcement



Hurricane Katrina was finally the big one that hit the Big Easy, playing out New Orleans' nightmare scenario. Winds wreaked havoc on the Superdome, which was being used as an emergency shelter, and caused water to gush over the top and eventually through the levee systems that keep New Orleans dry. The flooding that ensued devastated much of the city and surrounding areas.

New Orleans has always known that a category three or stronger hurricane would be no match for their levees, which was a main reason for a mandatory evacuation of people living in the area. However, there were still thousands of people who stayed either because they did not have the means to leave, thought this was another false prediction, or did not want to leave their homes, belongings and pets behind.

It was estimated that 90 percent of the people in harm's way evacuated before the storm, which still left thousands of people who would need rescuing in the event of flooding. The Louisiana Department of Wildlife and Fisheries Enforcement Division agents along with biologists and technicians from the wildlife and fisheries divisions would be the first ones in the water saving people in the event that this worst-case scenario came true.

CALM BEFORE THE STORM

Since LDWF enforcement agents are fully trained in water rescue, boat navigation and first response, the Enforcement Division has always been on alert for missions involving water rescue.

"All of our officers have had first responders training, which is an advanced first aid training," LDWF Enforcement Division Lt. Col. Keith LaCaze said. "In addition, some officers have been trained in coordinating, establishing and running search and rescue operations. We also have a dive team and are trained in medical evacuations."

The New Orleans area agents were also victims of the storm and had to evacuate their own homes. One of those agents was Sgt. Glenn Jackson, who lived at Carrollton and Canal and evacuated to Jackson, Mississippi, on the Sunday preceding the storm.

In addition to rescue training, LDWF has more than 300 boats that belong to the Enforcement, Wildlife, Fur and Refuge,

Inland and Marine Fisheries divisions and personnel with extensive knowledge of operating boats.

"Our mission was to get people out of the water." — LDWF Lt. Col. Keith LaCaze

Agents throughout the state were notified on Friday, Aug. 26, before the storm hit, to fuel up and pack food, water, linens and extra clothes.

"We (agents) bought ice chests and everything we might need to survive on for four or five days in our vehicles," said Sgt. Michael Kelly, a 19-year veteran with the Enforcement Division from the Minden office. "We also went out and filled up every gas can we could find."

Personnel from other LDWF divisions were also notified over the weekend to be ready just in case the Enforcement Division needed extra people and boats for the rescue missions.

"On Sunday we got extra fuel for our boats," said Jody David, a biologist for 17 years with the Inland Fisheries Division out of Opelousas. "We've always been told in case of emergencies to be ready to go and this one hit us hard."

KATRINA BRINGS DESTRUCTION AND FLOODING TO GULF COAST

After Katrina made landfall on the morning of Monday, Aug. 29, agents from the Shreveport, Monroe, Ferriday and

LDWF Lt. Col. Keith LaCaze gives out search and rescue assignments at the mobile command center near Kenner.



Photo by Adam Einck/LDWF Public Information



Photo by Lt. Remy Broussard/LDWF Enforcement

In some places, flood waters reached the gutters, forcing residents into their attics for safety, awaiting rescue and transport to safe, dry land.

Alexandria areas met at 9 a.m. at Woodworth, which is just south of Alexandria. An hour later they were on their way to Baton Rouge to join the rest of the rescue crew at LDWF headquarters.

"We knew at that point that it was a very serious situation down in the New Orleans area," LaCaze said. "The preliminary flooding and damage had already been reported. We decided at that point to go

Levee breaches filled New Orleans with water, leaving people stranded in their attics, patients at hospitals without electricity and evacuees surrounded by water at the Superdome.

ahead to New Orleans, and around 1 p.m., we were in route."

LaCaze said the first wave of rescuers included 62 agents and 31 boats. A state trooper and a couple of bridge inspectors escorted them into New Orleans while Katrina was still inflicting damage on the

communities they passed along the way. Since this convoy was the first one into New Orleans after the storm, nobody knew if the bridges beyond LaPlace and over Lake Pontchartrain were passable.

The bridge inspectors went over each elevated part of the interstate and bridge first to make sure the rescuers could safely get into New Orleans from that route. "They were the guinea pigs or the canaries in the mineshaft to see if those bridges were safe to pass," LaCaze said.

Meanwhile, the other LDWF divisions were instructing their standby personnel to be in Baton Rouge Tuesday morning to assist with search and rescue efforts.

The mission for LDWF's search and rescue personnel

was to go into flooded areas with their boats, take people that were stranded and get them to higher ground, where ground transportation would take them to shelters across the state and nation. "We have the boats and off-road equipment to access remote areas," LaCaze said. "Our mission was to get people out of the water."

THE AFTERMATH

Hurricane Katrina delivered a massive blow to the New Orleans area. The wind produced a storm surge that caused Lake Pontchartrain to fill rapidly and thus overwhelm the levee systems. These levee breaches filled New Orleans with water leaving people stranded in their attics, patients and staff at hospitals without electricity and evacuees surrounded by water at the Superdome.

MONDAY, AUG. 29: LDWF Enforcement agents were in the Metairie area at about 2 p.m. and started rescuing people right off Interstate 10. Agents then received a report that a nursing home with about 50 people needed to be evacuated on Power Blvd. While the agents were evacuating the nursing home, Capt. Brian Clark and Sgt. Rachel Zechenelly, who are both from the New Orleans area and lost their homes in the storm, started to find routes that were

passable by vehicles to search for boat launch sites.

"We had some areas where we knew we had people to rescue, but we were blocked by water and land," LaCaze said. "If you launched a boat, you could only get so far before hitting land again. Once those routes were determined, we got into those areas where people needed help."

Sgt. Kelley said they tried to focus on areas with the largest populations and the deepest flooding, which was where the levees broke and people had taken to their rooftops to stay out of the water. "We were concentrating on the critical people in attics or up on rooftops," he said.

Agents met up with the New Orleans Fire Department on the eastern side of the city, which was already under water. They broke into three groups and started bringing people out of the water. "At that point you could go anywhere and find people. The first phase of rescue operations began right there," LaCaze said.

Agents launched boats and saved people from the rising water by bringing them to dry ground on top of interstates throughout the night and into Tuesday morning.

"We had to use searchlights because you had power lines hanging in the water and all kinds of other obstructions," LaCaze said. "After the first night, we didn't run nighttime operations because you just couldn't see and the security aspect was a big concern."

TUESDAY, AUG. 30: Starting Tuesday morning and continuing into Wednesday, other LDWF divisions started heading toward New Orleans to join in the search and rescue efforts. The Wildlife Division sent down 25 people with 13 boats, Fur and Refuge supplied nine boats and 24 personnel, Inland Fisheries had over 40 people and 30 boats and Marine Fisheries provided about 20 people and five boats. In addition, each division supplied logistical support by bringing much-needed fuel, food, water, radios and various other materials throughout the rescue operations.

"I got there Tuesday morning and went into the Chalmette area," David said. "We rescued people until dark. Most of that was getting people off their roofs and balconies and bringing them back to where we launched our boats." LaCaze said, "By break of day Tuesday, we had rescued 500



Above, rescuers sweep the New Orleans area looking for stranded residents that needed help. Very often residents carried the only possessions they could salvage in plastic bags.

Below, residents take to high ground to stay dry. Initially, many refused to leave their homes.



Seeing the city for the first time since the storm was devastated by the library where I check out books... It was extremely traumatic.

In some cases, LDWF search and rescue teams were able to pull their boats right up to houses to transport stranded residents to safety.

or more people at one location and three or four hundred people at two other locations. We had a lot of people massed up on the interstates and every once in a while a military transport would take out 40 or 50 people at a time.

"We had to start using our own trucks for transport because we had to get these people out of the sun. Especially the elderly and sick people," LaCaze added. "We were putting people in the backs of our trucks and taking them to the Superdome until dark."

At that point the rescuers had been working for 36 hours straight. "We were exhausted and our resources were getting depleted, so we had to pull back that night. We crawled back to the National Guard Base in Carville to rest and get something to eat," LaCaze said.

Sgt. Jackson, who was still in Mississippi, was having a hard time getting back to help his fellow citizens of New Orleans. "We had no power Tuesday, so I couldn't call communications or let my rank know I was trying to get in route. The

Damage and debris, like this immense downed tree, made excursions into the floodwaters tricky and dangerous.



Photo by Parke Moore/LDWF Wildlife



Photo by Adam Einck/LDWF Public Information

neighborhood I was in had too many downed trees and I didn't have enough fuel to get back to Baton Rouge. I was sitting there biting my nails and became extremely frustrated, not being able to help out right away," he said.

That day other state agencies started arriving to assist in the search and rescue efforts. Those agencies included Texas, Missouri, Ohio, Minnesota, Michigan, South Carolina, North Carolina, Tennessee, Kentucky and Illinois.

WEDNESDAY, AUG. 31: On Wednesday morning the search and rescue teams met at the Tanger Outlet Mall in Gonzales to set up the convoy and head back to New Orleans. Their main mission this day was to start evacuating Charity, Tulane and Lindy Boggs hospitals.

They found a place to launch their boats at Perdido and Loyola to start the evacuation of hospitals. They then took those patients to a triage staging area set up by the Shreveport Fire Department in a park-

We were launching boats across from city hall and passing

— Sgt. Glenn Jackson

ing lot on dry ground where patients would be prepared for ambulance transport.

"Evacuating those hospitals was definitely a day's work," Kelley said. "I would say a third of the patients that we evacuated from Tulane were wheelchair bound. We would have to pick those people up in their wheelchairs and put them in our boats. Then we would have to offload them at the staging area."

LaCaze said, "We took out 60 or more patients from Tulane on Wednesday, some of them were stretcher bound so we brought backboards for them."

Ambulances came in and got some of the patients from the staging area, but there were still 50 that got left behind. "It was getting late in the day and we had to put those remaining patients into the back of our trucks and offload them by Causeway Boulevard," LaCaze said.

THURSDAY, SEPT. 1: On Thursday the search and rescue teams again concentrated on evacuating the rest of the hospitals. This was also LaCaze's first day at the command center in Kenner.

Photo by Maj. Sandy Dares/LDWF Enforcement



"It was controlled pandemonium," LaCaze said about the command center. "We would get all the requests for information and assistance here. Then we would have logistical issues to take care of such as getting fuel and transport to the right places. Then you had a tremendous amount of calls coming in and people coming up to you with special requests, needs and questions."

Sgt. Jackson finally made it to Baton Rouge Thursday night. "I was finally able to get in line and put gas in my car Thursday. I was also able to get through to communications and they told me to come to Baton Rouge. I left for New Orleans Friday morning," he said.

FRIDAY, SEPT. 2, SATURDAY, SEPT. 3, and SUNDAY, SEPT. 4: During these days the search and rescue teams concentrated on specific rescue requests as they came in from the command center.

Katrina did more than flood the New Orleans area. It also destroyed buildings, some of which burned in the aftermath, making the search and rescue effort that much more difficult.

Many residents and businesses left messages for Katrina, which her waters fiercely ignored.



Photo by Adam Einick/LDWF Public Information



Photo by Parke Moore/LDWF Wildlife

LDWF teams searched for stranded people, bringing them to higher ground where buses would transport them out of the city safely.

"We would get to the mobile command center early in the morning and get everybody broken into groups," LaCaze said. "Then we would task them out to handle assignments in specific areas."

For Sgt. Jackson, seeing the city he grew up in for the first time since the storm was heartbreaking. "We were launching boats across from city hall and passing by the library where I check out books. Saturday or Sunday I was able to get into my neighborhood and that was even more devastating. To see the businesses I frequented and the homes of friends that were covered in water was extremely traumatic.

"My house was up on brick piers and it still had about two feet of water inside," he said. "I know the streets intimately. I'm in

a boat going through neighborhoods that I've been in since I was seven."

MONDAY, SEPT. 5, TUESDAY, SEPT. 6, AND WEDNESDAY, SEPT. 7: By this time, most of the people that wanted to leave had already been rescued. "By Monday, we were beginning to see there were some that wanted to stay," LaCaze said. "We just kept going back into those areas and found that some people would change their minds."

The command center was also getting caught up with the 911 calls and things were starting to slow down

"We were getting a pretty good handle on the rescues. We knew that we could start downsizing operations and start sending people home that were helping from other state agencies," LaCaze said.

It's a good feeling to help people. I think all of us have a desire to do that."

— LDWF Sgt. Michael Kelly

THURSDAY, SEPT. 8 AND FRIDAY, SEPT. 9: LDWF started sending people home for good on Sept. 8 and 9. They did, however, keep a small search and rescue



LDWF Enforcement Photo



Photo by Lt. Remy Enussard/LDWF Enforcement

task force behind as long as there were still people requesting help.

"Most of the area was accessible by vehicle at this point. Plus the military and other agencies were taking control of the situation," LaCaze said.

Rescuing people from a flooded city the size of New Orleans had never been attempted before Katrina came ashore. The total number of rescues by LDWF is estimated to be 21,000.

"We rescued thousands of people," LaCaze said. "In those initial phases we tried to take people's names. I would go around and ask, 'How many do you have?' and they would say, 'I got 300 and something,' and another guy would say, 'I got over 400 people.' It was then that I realized that taking people's names would be next to impossible."

All in all it was an experience that the LDWF search and rescue teams will never forget.

"I think we took the initiative and just went forward and helped people. That is all you needed to do," David said.

Kelley said, "It's a good feeling to help people. I think all of us have a desire to do that."

LaCaze said that he was extremely proud of his agents' performance and would like to see every agent receive life-saver awards. He also said that it was a total team effort and that his agents appreciated the support the rest of the department gave them.

LDWF Enforcement Photo



Despite their personal grief, many of the rescued citizens showed genuine gratitude for the search and rescue teams that brought them out of the flooded city.

Jackson reiterated this sentiment: "Everybody in our department did a superb job. Morale was high and I didn't hear one complaint. Everybody from top to bottom went way beyond the call of duty."

Adam Einck is the News and Media Relations Officer for the Louisiana Department of Wildlife and Fisheries.



Photo by Adam Einck/LDWF Public Information



LDWF Enforcement Photo

FRIDAY, AUG. 26, 2005

Fisheries employees move boats and equipment along the coast to inland staging areas. Hurricane Katrina enters Gulf of Mexico. Wildlife staff secure Pass-a-Loutre and Pointe aux Chenes WMAs and move boats out of Pass-a-Loutre. As predictive models are moved closer to Louisiana, evacuation of staff to west is underway.

Staff from all coastal WMAs and refuges are moved out of coastal facilities with equipment deemed movable. All LDWF staff are alerted to remain on call and evacuate as parish officials dictate.

Enforcement commanders move to state Emergency Operations Center (EOC), begin monitoring storm and establish communications with HQ and regional offices on personnel and coastal equipment evacuation inland. 225 enforcement agents involved in preparation.

SATURDAY, AUG. 27, 2005

Fisheries staff move large crew vessels inland and remain on call. Wildlife employees secure and evacuate Pass-a-Loutre WMA. All boats, equipment and staff are removed or secured at all remote WMAs and refuges. Enforcement stages 60 boats at headquarters in Baton Rouge with staff; all other LDWF watercraft (250) organized at regional offices (30 boats in Florida parishes) are poised to head to rescue area after storm passes. Emergency Operations Center is manned 24 hours from this point forward.

SUNDAY, AUG. 28, 2005

Enforcement assists with evacuation of New Orleans area staff (all divisions), many of whom were moved to Baton Rouge headquarters. All enforcement staff put on alert to respond to storm effort.

MONDAY, AUG. 29, 2005

After Hurricane Katrina moves through Louisiana, LDWF staff re-establish communications with evacuated staff and mobilize for rescue of stranded citizens in Orleans, Jefferson, St. Bernard, Plaquemines, St. Tammany, Tangipahoa and Washington parishes. Enforcement dispatches 60 boats to greater New Orleans area and launches at I-10 and Causeway to begin search and rescue (SAR). 30 boats in Florida parishes begin SAR.

TUESDAY, AUG. 30, 2005

Enforcement coordinates all additional LDWF small flatbottom and shallow V-hull boats to assist in SAR, departing at 5 a.m. from Baton Rouge and all regional offices outside of rescue area. Biologists and specialists join law enforcement agents on SAR missions. 300 LDWF staff involved directly in SAR, including biologists and surveyors from Inland and Marine Fisheries divisions and Wildlife and Fur and Refuge divisions; 100 staff members in support of SAR. Search and rescue continues: 3,000 estimated cumulative total persons rescued.

WEDNESDAY, AUG. 31, 2005

Enforcement continues to coordinate small boat rescue efforts, calls for assistance from out-of-state agencies with small boat search and rescue capabilities and enforcement training. Texas Parks & Wildlife provides 50 boats to SAR effort, plus LA DEQ, and LA Office of State Parks watercraft bringing boat total to 450 involved in SAR effort. Flooding increases due to breaches in levee. 6,500 estimated cumulative total persons rescued.

THURSDAY, SEPT. 1, 2005

Wildlife and Fisheries biologists provide continued support in N.O. Enforcement gains out of state support from 12 additional state agencies, along with professional law enforcement and search and rescue teams from around the country. SAR task force assigned to evacuate patients from area hospitals and medical centers. Search and rescue continues: 10,000 estimated cumulative total persons rescued.

FRIDAY, SEPT. 2 — SATURDAY, SEPT. 3, 2005

Enforcement continues SAR. Evacuations completed from Charity and Methodist hospitals and Chalmette, Lakeview, Tulane and University medical centers. 18,000 estimated cumulative total persons rescued.

SUNDAY, SEPT. 4, 2005

LDWF-coordinates small boat rescue effort totals through peak recovery dates: 400 boats (LDWF and LA state agencies) and 400 staff (LDWF), plus 392 out-of-state personnel and 274 boats. SAR continues: 20,000 estimated cumulative total persons rescued.

MONDAY, SEPT. 5, 2005

SAR continues: 21,000 estimated cumulative total persons rescued. Federal presence and National Guard troops have made most areas secure and improved speed of SAR. Water levels are receding in most areas making small boat rescue difficult. Search and rescue crews are reporting that many residents who rode out the storm, and had refused to leave early into rescue effort, are now coming out. Added agency support from out of state has provided relief for LDWF and all associated rescue personnel involved in initial days of recovery. Staging areas are now providing food and rest stations for crews working 12 - 16 hour days.

TUESDAY, SEPT. 6 — WEDNESDAY, SEPT. 7, 2005

SAR continues: 21,000 estimated cumulative total persons rescued. Water levels continue to recede in most rescue areas making small boat rescue difficult in some areas. Small boat rescue teams are still encountering some residents who refuse to leave. Numbers have leveled off—less than 50 rescues Wednesday. Areas worked Wednesday: Lower Ninth Ward, mid and central inner city, and some parts of New Orleans east. Search crews are re-sweeping areas to ensure that all who want to leave have boat transport access. Presence: 20 LDWF flatboats and airboats (plus staff) to remain in rescue area to support local police and emergency rescue efforts. LDWF biologists turn attention to assessment of fish and wildlife habitat to determine storm damage. Fisheries Division staff will focus on hurricane damage to coastal and inland waterways and the marine and inland fish species affected. Wildlife Division staff damage will survey 12 wildlife management areas and refuges affected by the storm to assess effects on waterfowl and other marsh and wetland species. 90 LDWF employees have been displaced from homes and / or job locations. The agency is working to relocate all near new work assignments.

THURSDAY, SEPT. 8 — FRIDAY, SEPT. 9, 2005

SAR continues. Search crews are re-sweeping areas to ensure that all who want to leave have boat transport access. SAR teams report that many New Orleans residents still refuse to leave their property. Office of Fisheries issues preliminary loss estimates: potential \$1.1 billion loss in retail fisheries revenue over next year due to Hurricane Katrina damage. Figure increases to \$1.3 billion when 2-year oyster sales losses are added. Estimates assume that the hurricane's impact is limited to Orleans, Jefferson, Plaquemines, St. Bernard, St. Tammany and lower Lafourche parishes.

SATURDAY, SEPT. 10 — SUNDAY, SEPT. 11, 2005

Wildlife Division biologists, technicians and foresters continue working in and around state WMAs in Washington and St. Tammany parishes. Biologists find encouraging signs of life—fresh deer and turkey tracks. Enforcement Division agents work with New Orleans Police Department in response to specific requests for evacuation assistance. Regular-day enforcement agents to resume regular patrol duties. An Enforcement Strike Force contingent remains in the greater New Orleans area until no longer needed.

MONDAY, SEPT. 12, 2005

Fur and Refuge Division survey work is limited to aerial surveys in the hardest hit areas. Boat launch points are difficult to access in Plaquemines Parish. Fur and Refuge biologists conduct ground surveys on marshlands conditions around Delacroix. Inland Fisheries Division completes a preliminary survey of rivers feeding Lakes Pontchartrain and Maurepas where low water oxygen levels contributed to fish kills. Marine Fisheries Division petitions NOAA Fisheries for temporary turtle excluder device (TED) exemption for Louisiana shrimpers. Wildlife Division personnel continue to assess storm-damaged parishes to determine recommendations for hunting season adjustments that might be needed.

TUESDAY, SEPT. 13 — WEDNESDAY, SEPT. 14, 2005

Wildlife Division recommends closing deer and rabbit season in Plaquemines and St. Bernard parishes until further notice to protect remaining game populations. (Declaration of Emergency signed Sept. 16, 2005 by Secretary Landreaneau to limit hunting in those two parishes.) Wildlife Division foresters estimate timber losses at \$27 million on state WMAs. Roadways leading to LDWF properties are being cleared, but access into WMA interiors will be difficult in the upcoming season due to downed trees and limbs.

THURSDAY, SEPT. 15, 2005

Marine Fisheries and Fur and Refuge divisions report most boat launches and marinas in poor condition, with many sport and commercial boats scattered and damaged in St. Bernard, Plaquemines and Jefferson parishes. Shrimp boats in the Violet Canal were still afloat, though many exhibited structural damage. Bayou Terre aux Boeufs choked with marsh grass and floating mud through the Reggio area, down to about Bayou Lery. Below that junction, the bayou is passable, though there were still substantial amounts of marsh and structural debris. Access to these upper stretches of the bayou will probably be impossible for some time to come. Nearly all houses and other structures in the Reggio/Delacroix area were destroyed; the few remaining took severe damage. Severe marsh damage found in areas surveyed with substantial clumps of overturned marsh with root masses exposed. Marine Fisheries Survey Section moves oyster lease records from New Orleans office to Baton Rouge for temporary housing.

FRIDAY, SEPT. 16, 2005

Inland Fisheries reports in Lake Maurepas area (Blind, Amite, Tickfaw rivers and Diversion Canal) note fish kills and low dissolved oxygen in waterways. The same are noted in Lake Pontchartrain area (Tangipahoa and Tchefoncté rivers, Bayous Lacombe, Liberty and Bonfouca). Higher dissolved oxygen levels noted at river mouths and north shore of Pontchartrain. In Rigolets Pearl River area, fish kills reported from the East Pearl. The West Pearl to the Rigolets and Little Lake have good water and no projected problems for aquatic life. North Barataria area (Lakes Salvador and Cataouatche and Lac des Allemands) suffered minimal impact from Katrina. Few localized fish kills are found, but the projected outlook for recovery is positive. The Department of Health and Hospitals reopens oyster growing areas from the Lafourche/Terrebonne parish line to the Atchafalaya River. Marine Fisheries staff begins reef cleansing efforts in the Sister Lake public oyster seed reservation.

As Hurricane Katrina moved out of southeast Louisiana, man and beast emerged from their safe havens. The view of surrounding, familiar landscapes was one of massive, brutal destruction. Houses and habitats completely destroyed; roads and rivers unrecognizable; stores and feeding grounds submerged.

Louisiana is no stranger to hurricanes. Through the generations, hurricanes have pounded our coastline, washed away our towns and devastated our natural resources. However, after each storm, Mother Nature has replenished the Sportsman's Paradise. Some hurricanes took longer to recover from than others, and some left permanent changes on our landscapes. Hurricane Katrina will do both, requiring years for certain species to recover, and forever changing our landscape and coastline.

For the Louisiana Department of Wildlife and Fisheries (LDWF) fish and wildlife resource impacts and habitat assessment was a primary concern after Katrina. LDWF staff flew over the affected parishes realizing for the first time the full extent of the devastation and the amount of work ahead. Immediately the fisheries and wildlife biologists began making their assessments and recommendations.

Story by
Marianne BURKE

A CHANGING



Chandeleur Islands
July 17, 2001

Fisheries

The impact of Hurricane Katrina on Louisiana's fisheries resources was catastrophic, to say the least. Hurricane Katrina made landfall first near Empire, and then crossed the delta into the Breton and Chandeleur sounds to the east. These are areas of shallow-shelf estuarine waters including extensive oyster reefs, large marine and estuarine beds, and wetlands. Although reconnaissance flights took place at the time of this report and continue to take place, the magnitude of wetland loss or changes in topographic structures that may affect fishing grounds is still unknown.

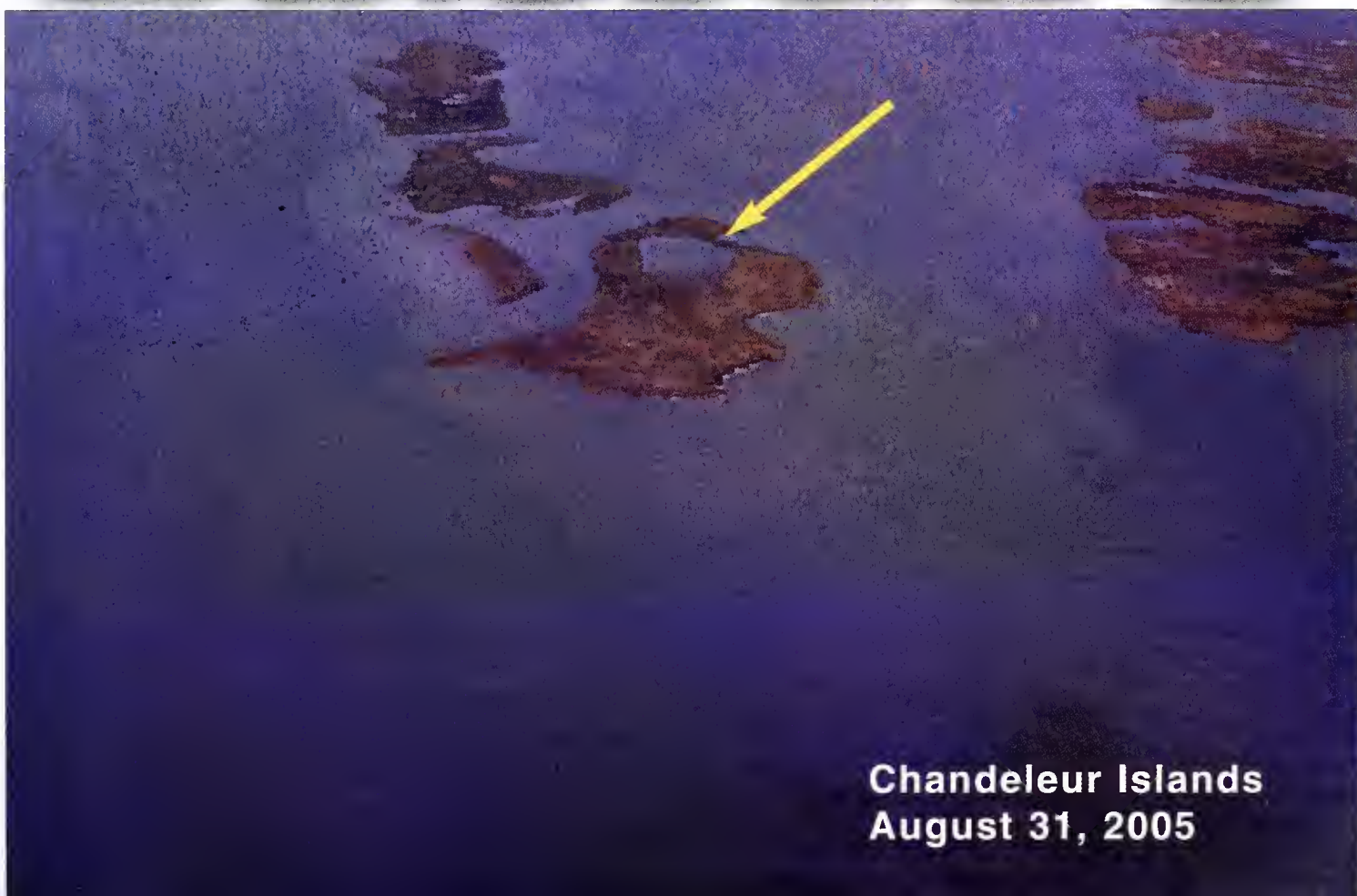
Debris-laden waterways would present serious problems for our fisheries industry. Trash and refuse deposited by the hurricane over traditional fishing areas would threaten both gear and waterway navigation. Large amounts of debris left in coastal waters would affect shrimp trawlers, boaters, swimmers and beach visitors along the coast.

As biologists continued their assessment of the damaged areas, water quality became an issue. Poor water quality, primarily low dissolved oxygen, is always a major concern when powerful hurricanes cause destruction of this magnitude. Fish, crab, shrimp and oyster resource damages are generally the result of low oxygen

and/or sediment overburden. After Hurricane Andrew (1992) Florida and Louisiana experienced massive fish kills from similar conditions. The Environmental Protection Agency (EPA) and Louisiana Department of Environmental Quality (DEQ) have implemented water quality monitoring systems for surface waters in the city of New Orleans and Lake Pontchartrain. DEQ estimated that releases from Hurricane Katrina included two large oil spills (68,000 bbls at Venice and 10,000 bbls at Chalmette), releases from 25 major sewerage treatment centers and many smaller ones, as well as runoff from countless fuel storage tanks, households and industrial chemical stores (gasoline, diesel, antifreeze, bleach, human waste, acids, alcohols, etc.). Standard precautionary oyster harvest closures were put in place by the Department of Health and Hospitals prior to Hurricane Katrina. At the time of this printing, no further closures or advisories had been issued for the impacted area.

The Breton and Chandeleur sounds, directly in the path of Katrina, were the most extensive sea grass beds on the Louisiana coast, including turtle grass, shoal grass, manatee grass, widgeon grass and star

LANDSCAPE



Chandeleur Islands
August 31, 2005



Photos by Parke Moore/LDWF Wildlife



Left: Debris from across the several parishes was deposited along Katrina's path. Until cleanup is completed, whether in the cities or coastal areas, it will be a problem for humans and animals.

Right: Submerged vehicles like the fire truck shown in this photo contributed to the contaminants found throughout the flood waters. EPA and DEQ are monitoring surface waters in the city of New Orleans and Lake Pontchartrain.

grass. They provided unique marine habitat along the eastern edge of the Mississippi delta. Lakes Pontchartrain, Catherine, and Borgne were also home to aquatic vegetation, with recent studies of grass beds in Lake Pontchartrain on the increase. However, high wind, wave action, and increased levels of sediment and pollution are expected to drastically affect these beds.

Other areas of great concern in the Gulf of Mexico were the artificial reefs constructed under Louisiana's Artificial Reef Program, which utilizes obsolete oil and gas platforms. In the past, these artificial reefs showed very little movement or damage after large hurricanes such as Ivan and Lili. Inspections have yet to take place since Hurricane Katrina.

As the days passed, the economic impact to Louisiana's fisheries resources began to surface. Using available data and several independent approaches, LDWF staff was able to quantify in economic terms, the estimated losses caused by Katrina. For all commercial species, production loss was estimated in terms of dockside value by assuming that commercial production would be disrupted for varied lengths of time (i.e. six months, 12 months and 24 months). The same approach was used for both commercial and recreational fisheries for estimating retail value of lost sales based on a potential disruption of fishing activities for the same varied lengths of time. The table at right shows commercial and recreational fisheries losses at dockside and retail value.

Of all the species in Louisiana's fishing industry, oysters were affected the greatest. For oysters, a direct loss of the resource was also estimated by using the stock size before Katrina and previous studies of hurricane-related oyster mortality (from 10 percent after Ivan to 100 percent after Andrew on some of the public oyster grounds). Because of the size and strength of Katrina, it was estimated that there would be a high mortality of oyster resources on both public and private areas due to heavy sediment and vegetative burdens from Bayou Lafourche east to the Louisiana-Mississippi state line. Oysters generally take between two and three years to grow from larvae to market size, therefore a two-year impact to oyster harvest is expected at the minimum.

The recreational fishing industry suffered no less with losses just under \$200 million. This figure is based on retail value in the affected areas for a 12-month period. Recreational fisheries do not have values comparable to dockside values like the commercial sector, so estimates of the retail value were used. These losses reflect only lost sales related to fishing activities. An important fact to point out regarding economic impact to the recreational fishing industry is that approximately 63 percent of the 515 charter and guide vessels registered in Louisiana are registered in those severely impacted parishes.

The value of damaged infrastructure supporting the fishing industry is difficult to quantify. Infrastructure losses are char-

Photo by Maj. Sandy Dares/LDWF Enforcement



Photo by Vaughan McDonald/LDWF Marine Fisheries



acterized as lost or damaged vessels, docks, ice plants and processing facilities, but also include roads and bridges, trucking, cold storage facilities, boat ramps, launches, marinas, bait and tackle shops. Due to the widespread displacement of local residents, labor shortages may also limit the ability of infrastructure to quickly recover, repair, or rebuild. Some perspective of the dimensions of the damage is suggested by the facts that 28 percent of Louisiana's wholesale/retail seafood dealers are based in the impacted parishes and 42 percent of both the commercial fishers and of the commercial fishing vessels are based in the impacted parishes.

One example of the economic impact Katrina will have on Louisiana's fishing

industry is one menhaden plant in Plaquemines Parish. This particular plant was severely impacted by the hurricane. The plant was flooded with several feet of water and the fleet of 11 boats was beached. This company reported approximately 270 displaced personnel, mainly in Plaquemines Parish, and landings of approximately 30 percent of the total gulf menhaden landings. Using information from the LDWF economic impact study, this company's estimated total economic benefit to Louisiana was \$116 million in retail sales, \$25 million in wages and earnings, and \$17 million in total landings. This one plant could result in a lost to our economy of almost \$158 million.

Damaged boats are but a small part of the loss to the infrastructure that supports the fishing industry. Boats, docks, ice plants, processing facilities, roads, trucking companies, etc. play vital roles in the business.

Preliminary Louisiana Fishery Losses Caused by Hurricane Katrina

Category	Direct Loss of Available Resource	12 Month Potential Production Loss at Dockside	12 Month Potential Production Loss at Retail Level
Crab	N/A	\$ 12,297,617	\$ 81,776,427
Freshwater Fish	N/A	\$ 189,019	\$ 1,256,934
Menhaden	N/A	\$ 14,050,883	\$ 93,435,257
Oysters	\$206,811,000	\$ 44,577,072 *	\$ 296,427,648 *
Saltwater Fish	N/A	\$ 11,836,588	\$ 78,710,687
Shrimp	N/A	\$ 81,054,864	\$ 538,996,879
Recreational Fisheries	N/A	N/A	\$ 199,517,744
Total	\$206,811,000	\$ 164,006,043	\$ 1,290,121,576

* Oyster losses are for two (2) years.



Photos this page by David Moreland/LDWF Wildlife



Wildlife

Katrina didn't stop at the coast with changing our landscapes. Just as our favorite fishing waters were changed, so were the hunting grounds in the impacted areas.

Hunting is a major economic and cultural activity in Louisiana providing jobs and economic benefit to Louisiana and the nation. Hurricane Katrina hit southeast Louisiana with winds in excess of 140 mph and a storm surge in excess of 20 feet. The loss of wildlife habitats and the infrastructure that supports hunting in Louisiana was at best, disastrous.

The major impact of Hurricane Katrina on wildlife habitat and resources occurred in the Plaquemines, St. Bernard, St. Tammany, Washington and the eastern portions of Tangipahoa parishes. Timber damage was extensive in the two parishes north of Lake Pontchartrain. Aerial surveys estimate a 65 percent loss in Washington Parish and 40 percent loss in St. Tammany Parish of the forest resources that support wildlife populations.

The Pearl River Wildlife Management Area (35,031 acres) suffered extensive timber damage. A once somewhat closed canopy forest now resembles an open, massive 'downed' forest. Timber loss alone on Pearl River Wildlife Management Area (WMA) could exceed \$27 million. This drastic habitat change will result in significant impacts for the resident and migratory species reliant on this forest structure. (An in-depth look at Pearl River WMA and the damage from Katrina can be found on page 20.)

Other WMAs impacted by the storm included Sandy Hollow (3,515 acres), Lake Ramsey (800 acres) and Ben's Creek (13,044 acres) WMAs, but preliminary assessments were still underway. Sandy Hollow WMA is primarily managed for upland game birds.

Based on recent economic studies the total economic impact of hunting in the parishes affected by Katrina is \$151.8 million, with retail sales of \$88.4 million. It is estimated the loss of hunting opportunity in the current season (2005-06) will result in a loss of retail sales totaling \$56.7 million with a total economic loss of \$97.4 million. It is also anticipated that 100 percent of the fur harvest in the affected parishes will be lost for the 2005-06 trapping season. This will result in a loss of \$370,000 in retail sales and \$680,000 in associated total economic impact to Louisiana.

Everything in the path of Hurricane Katrina took a serious hit. The marsh and wetland habitat below Highway 90 was another prime example of Katrina's fury. Preliminary assessments indicate that the 116,000-acre Pass-a-Loutre WMA received widespread damage to the wetlands. This WMA, located on the farthest southeastern tip of Louisiana's coast, received some of the strongest east winds of Katrina. Most, if not all, of the submerged aquatic vegetation and the delta duck potato, both important waterfowl foods, sustained severe wind and saltwater burn. A number of oil spills/releases were also observed on the WMA creating water quality issues and the severity of these spills and the damage assessment to Pass-a-Loutre is underway. Access to the remote facility is a logistical problem for the LDWF staff.

Pointe-aux-Chenes WMA, primarily located in Lafourche Parish also received damage. A significant amount of submerged aquatic vegetation in the three water management areas was removed by wind and wave action, and the facilities received extensive rain and wind damage from the Hurricane Katrina. (Hurricane Rita further compounded the flooding problem.)

Wildlife species research, habitat studies and determining future needs for the impacted parishes will require extensive planning, new management programs and a great deal of recovery work. Forested habitat impacts, both short and long-term, to wildlife species, restoration and management needs, will include broad studies on deer, rabbit, squirrel, and turkey in the impacted parishes. Likewise, with marsh and wetland habitat impacts, short and long-term needs will include studies on deer, rabbit, waterfowl, and other migratory game.

The estimated cost of recovering, repairing and replenishing these areas is in the millions, and like any natural disaster it is difficult to determine a precise dollar amount. The uniqueness of the hunting grounds, the available species and habitat found in Pearl River WMA and other impacted areas will present challenges to LDWF wildlife staff.

New Landscapes

In the days immediately after Hurricane Katrina, it was difficult to comprehend the devastation left behind.

Photo by David Moreland/LDWF Wildlife



However, through the past few weeks we have gained a better understanding of where we are and what we need.

The potential economic impact from Katrina on both the fisheries and wildlife resources will be difficult for LDWF and the State of Louisiana to handle. But recovery will take place, and the unfamiliar landscapes will become familiar over time. The Sportsman's Paradise will recover, once again.

At the time this issue went to print, the impacts of Hurricane Rita were not completely known yet. In the coming months the Louisiana Conservationist will keep its readers posted on the changing landscapes resulting from Rita.

Marianne Burke is the LDWF Public Information Director and a 17-year veteran of Wildlife and Fisheries.

Above: The road into Pearl River WMA at the permit station off Hwy 11 was completely blocked by downed trees. The bottom photo on the opposite page (pg. 18) shows the permit area just off to the right of this entry road.

Page 18, top photo: Houseboats along the West Pearl River at Hwy 90 were washed against the river banks. The red paint marks indicate the boats were checked for survivors by SAR crews. The middle photo is the resident's quarters at Crawford's Landing which barely survived.



A Forest Laid to Waste...

Pearl River WMA After the Storm

*Story and
Photos by
David
MORELAND*

For 30 years we had been saying that if a major storm ever hit Pearl River Wildlife Management Area (PRWMA) our forest would be destroyed. On Aug. 29, Hurricane Katrina brought our words to fruition. Three weeks later, on the first day of autumn, I would see the damage from ground level. My flight the previous day revealed heavy damage, but I did not think it would be too difficult to get around. My plan was to walk the old woods trail from English Bayou southward toward Perch Lake, stop at the double-log crossing, go east to Calhoun Slough, and then northward back to English.

The Perch Lake Road is identifiable on the old 1959 quadrangle maps. It was one of the old logging roads used in the early 1900s when the swamp was first logged. Many hunters go up Wastehouse Bayou into Perch Lake and follow the trail northward. The road basically follows a ridge-line that runs north to south. The road has deteriorated over time, and is best distinguishable during the winter. The trail was lined with large cow oaks, water oaks and obtusa oaks. There were a few hickory trees scattered around, along with white bay magnolia and American holly. Cypress trees, tupelo gum and swamp tupelo occur along the streams and in the swampy areas. Once past the double-log crossing, the understory becomes dominated with palmetto.

The old sentinel live oak tree that stood at the mouth of English Bayou had suc-

cumbed to the storm and had fallen into the bayou. Mark Bible, Area Supervisor for PRWMA, dropped me off on the bank. I readied my pack and told him to give me three hours to do what I had planned. Mark and the other crew members, Jimmy Stafford, Kenny Ribbeck, Mike Perot and Randy Myers, were going to check other sites.

I quickly found that the old landmarks I used to navigate on the woods trail were gone. The downed trees and limb debris made travel more difficult than anticipated. I kept my compass in my hand and worked my way southward. There was no resemblance of the trail. I found one large cypress tree along the trail still standing. The stretch of trail from the double blow down to the board-crossing slough was only recognizable from the cypress knees on the ground. I could not find the board crossing location, so I crossed the slough at another spot and headed to the double log crossing on the next slough. I crossed the log and went a little further south. As I photographed the site I couldn't help thinking, "How in the world could a hunter kill a deer and pack it out of this jungle?" Katrina has made hunting in this swamp much harder.

Another marker, a large cypress tree that was 15.1 feet in circumference, had the top knocked out of it. I moved eastward to Calhoun Slough, hoping that I could perhaps follow the slough bank, but again the downed trees and limbs made the going



tough. I would zig-zig the through the woods, crawling over and under the mass of timber. I had already drunk my only bottle of water and the sun was beating down on me. The once closed canopy forest that had kept the sunlight out was totally gone. Trumpet creeper vines were leafing out with new growth, a sign of things to come.

It is anticipated that there will be an explosion of vegetation that will really make it difficult to traverse the woods. The deer and hogs will now have all the food and cover they need. I recalled one of the first reports I wrote as a district biologist in 1977; it was about the need to cut timber on Pearl River, to open up the canopy and put some sunlight on the ground. Mother Nature has resolved that need!

The trip up Calhoun took forever. I would occasionally stop and cool myself off with the water in the slough. The damage to the cow oak trees was severe; any tree that was not knocked down suffered heavy limb damage. Cow oaks are white oak trees and make a very large acorn that is a desirable wildlife food. I found some green cow oak acorns on the ground. The large water oak, overcup oaks and obtusa oaks also suffered heavy damage. Sweetgum was now the dominant hardwood species in the flatwoods. The cypress and tupelo trees in the sloughs and swampy areas had not been hit as hard as the oaks either. The initial estimate of timber loss by our forester, Kenny Ribbeck,

was around \$27 million. Timber revenues are one source of funding for LDWF. This area will not be generating any revenue for a while. I did find deer and hog tracks and even saw three turkeys. I did not see the first squirrel.

Finally, after three long hours, I made it back to the bank of English; the crew was ready with cold water and Gator-aid. We discussed our findings and then headed out. Over the months ahead plans will be developed concerning forest management and restoration. With all the damage throughout this region, it is doubtful that the department can salvage timber from the area.

Most of the mills will have more hardwood timber than can be handled. Of major concern is the problem with Chinese tallow tree regeneration on the area. This invasive tree species has already begun to invade the forest, and now with all the sunlight, it may really become a nuisance.

Yes, Pearl River WMA will be open for hunting this year, but hunters are going to find tough going in the woods. Wildlife Division personnel have been busy opening up old Highway 11 and the gravel roads on the northern end of the area. Hunters should be aware that, with the downed and damaged trees, the woods can be dangerous, especially on windy days.

The forest that hunters have become familiar with has now taken on a totally different appearance, and will remain that way for years to come.

Katrina created an open canopy forest (above left) which allows sunlight into the forest floor, creating an explosion of vegetation.

Desirable wildlife habitat on this area was previously produced by managed timber cuts. The forest destruction Katrina caused (above right), is estimated at around \$27 million.

Formerly LDWF's Deer Study Leader, David Moreland currently serves as the Wildlife Division Administrator. He has been with the department since 1976.

Pearl River WMA: Before and After



At far left, the Perch Lake Road through the swamp is clearly visible. After Katrina (middle), this location is identifiable only by the cypress knees.

Below, two large spruce trees in the open woods around Perch Lake Road before Katrina.



In response to the damage to wildlife and its habitat in the coastal parishes, the Louisiana Department of Wildlife and Fisheries has made changes to some hunting seasons and areas. To keep abreast of the latest information on seasons and regulations, check with your local LDWF office or visit our Web site at www.wlf.louisiana.gov.

This board crossing (middle) on the Perch Lake Road was used by loggers many years ago. After Katrina (far right), this location could not be found, but now there are many fallen trees to cross on. Below, the same large spruce pine shown at right above, the top of it broken off by Hurricane Katrina.





Photo by Patti Faulkner/LDWF Natural Heritage

When the average Louisianian thinks about wildlife, he thinks about deer and ducks, quail and rabbits, or any number of other game species. But Louisiana is home, whether permanent or seasonal, to myriad species of non-game animals, many of which depend on the fertile and (as we have recently witnessed) fragile Gulf of Mexico coast to sustain them.

In a 2004 *Louisiana Conservationist* article, Jimmy Ernst and Nancy Higgenbotham explained that Louisiana, a state in which 457 species of birds have been observed, is an important stop-over twice a year for more than 60 species of birds migrating from—then back to—Central and South America.

Story by
Thomas
GRESHAM



This photo of the Munez Woods in Cameron Parish illustrates chenier habitat. Oak trees, hackberries and palmetos are common plants on coastal ridges.

Photo by Patti Faulkner, LDWF Natural Heritage

In events that birders call fall-outs, the birds making their semiannual trips drop from the sky to wooded cheniers, slightly elevated ridges that provide the only forest habitat along the coast for many miles. Cheniers usually support thick stands of live oaks and other trees. ("Chenier," pronounced shuh-neer', is a French word derived from "chene," meaning "oak.")

In a 1997 *National Wildlife* article, writer Les Line explained that migratory songbirds store fat at an average of 30 to 50 percent of their body mass before their flights. Louisiana always feeds its visitors well; whether on the trip out or coming back from the long flight over the gulf, some species depend on the high density of insects found on cheniers to gain weight faster, while others, Line says, favor trees bearing fruit or flowers.

The hurricanes may have had a significant impact on those cheniers, perhaps enough to influence migration patterns or contribute to the demise of certain species already on the decline. "It has the potential to be very detrimental," said LDWF biologist Eric Baka. But it will require further study — as much as five or 10 years — involving partners like the Department of Natural Resources, U.S. Geological Survey, The Nature Conservancy, The Audubon Society and hopefully many more, consid-

ering the time, effort and funding such analyses will take.

Dr. Jim L. Chambers, professor of forestry at Louisiana State University, has studied the effects of salinity and flooding on trees. He says that among different species, and even within the same species, trees tolerate saltwater differently. "Some individuals seem to survive well," he said, "while others succumb to low levels of salinity."

Certain conclusions can be drawn from his research; chief among them is that trees do have limits to the amount of salt they can tolerate. Cypress trees begin to show stress at

six parts per thousand of salt, that's six grams of salt per liter of water. "Around eight or 10 parts per thousand, they develop real problems," said Chambers. Chambers estimates that the freshwater-saltwater mix that reached the cheniers could have had in excess of 20 parts per thousand.

Depending on the quality of the soil, some trees may suffer greater damage as the water recedes. Evaporation in dense soils could concentrate the salt, while well-drained soils, such as on most cheniers, move the salt more quickly away from root systems. "The longer it is there, the worse damage it will do," said Chambers.

Aside from migratory species, resident birds may face their own difficulties. Many avian species depend on coastal barrier islands to act as rookeries. If those islands are damaged, birds like the brown pelican may not breed next season. In many areas, marsh grasses have been washed away or burned by the salty water of Katrina's storm surge. Species upon which coastal birds prey, including fish, shellfish and invertebrates that inhabit the marshes, could pass their troubles up the food chain.

Baka says that scientists who study birds can look on this tragedy optimistically as a good opportunity to further investi-

gate neotropical migrants. Biologists can plan more intense monitoring schemes and pick an indicator species, one to represent the neotropical migrants as a group, upon which to focus.

The balance of species will probably shift because of the changed landscape. If more mudflats occur as a result of the storm, those birds that thrive on mudflats will multiply, Baka explains. And though some species will be left homeless in the heavily forested areas farther inland, others will thrive because of the changes brought about by Katrina. Though the elusive ivory-billed woodpecker is yet unobserved in the Pearl River area, it is believed to favor trees that have died within the last three years, so potential habitat for that particular bird has actually increased. In addition, other birds that rely upon shrubs and tall grasses will have increased areas of habitat because forests with so many fallen trees — as many as 60 to 80 percent in Pearl River

Wildlife Management Area — have more light filtering through the forest canopy to the floor. The increase of light will undoubtedly stimulate the production of undergrowth.

Finally, Baka says, we must remember that nature is resilient. Damaged forests will grow again and most, if not all, of the species that live in Louisiana or stop by on the way through will return to healthy population levels. “This process has been going on for thousands of years,” he said. The animals and plants of Louisiana can adapt. They belong here.

Thomas Gresham is the executive editor of *Louisiana Conservationist* and assistant director of Public Information for the Louisiana Department of Wildlife and Fisheries.

The northern parula is a neotropical migrant among the first to arrive on Louisiana's coast in the spring and among the last to leave in the fall.

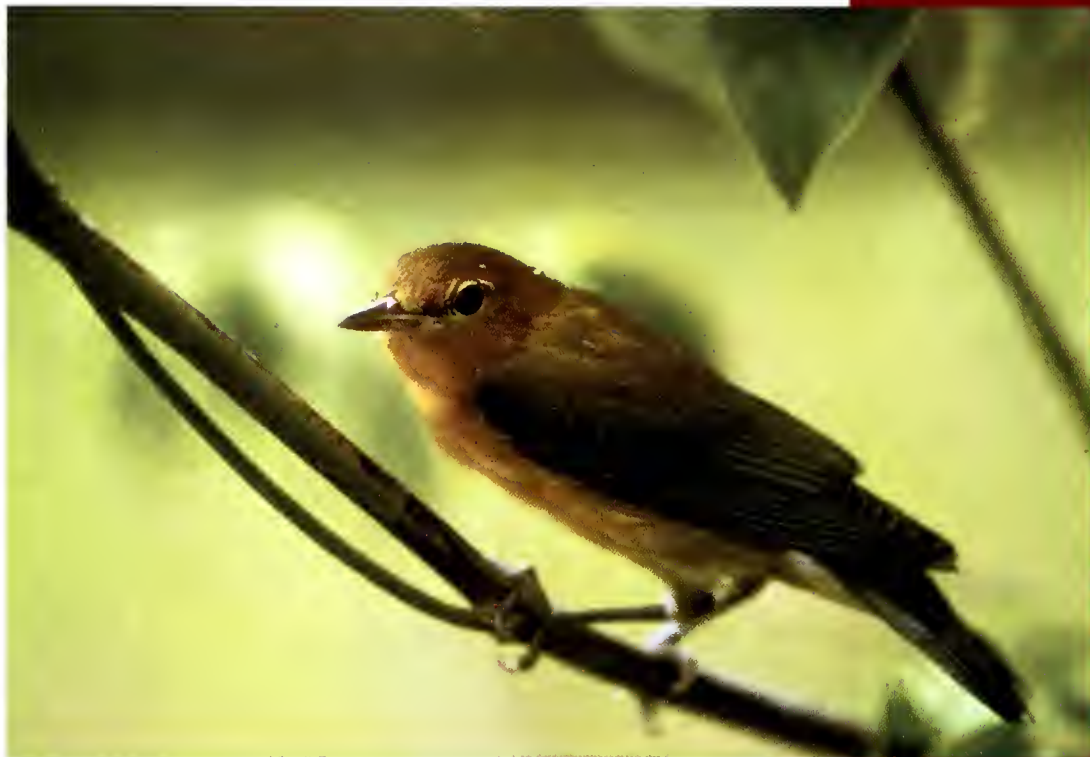


Photo by Nell Baldaccino, courtesy USFWS image library

Botanist Chris Reid studies plants for the Natural Heritage Section of the Louisiana Department of Wildlife and Fisheries. When the author asked him what effects the storms may have had on rare plants, he wrote: “The area I’m most concerned about is over in Cameron, particularly the beach and coastal dune grasslands that stretch from Holly Beach to around eight miles west of Johnson Bayou. There are a number of plants that occur in Louisiana only in that area, coming up from Texas.”

The following plants are rare or uncommon to Louisiana and occur in our state only on the beaches and sand dunes of Cameron Parish:

Dalea emarginata - wedge-leaf prairie-clover
Paspalum monostachyum - Gulf dune paspalum
Ratibida peduncularis - Mexican hat

Monanthochloe littoralis - saltflat grass
Pediomelum rhombifolium - roundleaf scurf-pea
Tidestromia lanuginosa - wooly honeysweet



Photo by Joel Courtney/LDWF Public Information

Reaching **OUT**

Employees Unite in Katrina's Wake

Story by
Joel
COURTNEY

In response to what is being estimated as the largest natural disaster in American history, every one of us wanted to do something to help. While enforcement agents and other departmental personnel took to the task of saving lives, other Louisiana Department of Wildlife and Fisheries (LDWF) employees gave their time, energy and resources in the aftermath of Hurricane Katrina to assist with everything from answering volunteer calls and taking donations to preparing food for rescuers.

Search and Rescue Support

As LDWF Enforcement Division agents continued search and rescue (SAR) operations, the department set up a phone bank in the communications office at headquarters in Baton Rouge to field the high volume of calls from individuals and groups wishing to assist in the recovery. The decision to move the calls to the department was in an effort to limit the number of non-rescue calls being received at the state Emergency Operations Center (EOC).

Rescue calls were a priority. Civilian volunteer call numbers were released to the public to re-route them to LDWF departmental lines and free up rescue lines at EOC.

LDWF staff members manned phones in shifts from 6 a.m. to 10 p.m., taking down volunteer information and compiling it into a database to be sent to the Emergency Operations Center. The database was used to help prioritize volunteers based on search and rescue experience. LDWF staff that worked phones were kept busy with a constant stream of calls from eager individuals wishing to lend a hand.

"It was amazing," said Gail Allatto, Administrative Director of Property Control for the department and phone bank volunteer. "The calls were literally non-stop. You would hang up the phone and immediately pick it up for the next call. So many people wanted to help."

Some 200 calls were received the first day by LDWF staff. After a couple of days, the phone bank was moved to the Licensing Section of the department to accommodate more volunteers and to decrease the number of busy signals commonly associated with such a high call volume. Those who called in to volunteer were placed in the prioritized SAR database as a result of the phone bank.

With rescuers working long, grueling shifts, it was difficult for many of them to get adequate sustenance while on the water. In response, department employees assembled snack packs that could be carried on the boats with rescuers. The packs consisted of a zip-lock bag with bottled water or sports drink, trail mix, beef jerky, peanuts and any other snacks that wouldn't melt in the sweltering Louisiana heat.

Employees of LDWF's Fiscal Section stuffed the first batch of snack packs at the headquarters building in Baton Rouge.

"We went to Sam's Club and bought the bags and stuff to put in the bags," said Wynette Kees, Fiscal Officer. "We accountants are pretty organized. We basically set up an assembly line and it worked out very well."

The first batch produced 300 snack packs to appreciative rescuers, many of whom shared them with the people they were rescuing. The following day volunteers filled 600 more packs for distribution.

"Initially we wanted to prepare about 1,200 total packs if the project was successful. The Enforcement Division requested we continue (filling packs)," said Kees.

To handle this request quickly, employees from the Human Resources and Computer sections assisted with filling the packs. About 25 people, employees and some family members spent the Labor Day holiday filling another 600 packs.

When all the packs were filled, an estimated 1,500 total were assembled: 300 above the initial goal.

"We're essentially office personnel. We weren't out in the field on the boats," said Kees. "This was something we could do to contribute to the rescue efforts."

The Storm Hits Home

Shortly after Katrina cut its swath of destruction along the Gulf Coast, LDWF began the task of meeting the immediate needs of displaced employees. Many of these were scattered across the state, stunned, shaken and in many cases completely homeless.

Like that of so many businesses in the aftermath of the storm, the number one priority was assuring that everyone was safe. The department has offices in several of the hardest hit areas and many employees maintain residences in those areas, so the need to establish contact was critical.

"Because communication was so disrupted in those areas, we had employees that were unaccounted for until Thursday, three days after the storm. That was rough," said Gail Allatto. "Thankfully everyone was safe and sound. Once you know that, you move on from there and try to assist them in any way possible."

That assistance has come by way of donations of items from all over the country and monetary donations to the recently established LDWF Employee Relief Fund.

Because so many displaced employees are cut off from their homes and many have no homes to go back to, they are currently housed in temporary residences. There is a tremendous need for essential items such as clothing, toiletries, small appliances and even toys for their children.

To assist with the needs of employees affected by Katrina, the department formed a committee to establish employee assistance programs. One such program was the creation of a "general store" for displaced employees.

LDWF employees who volunteered to work the fast-paced phone bank were able to talk to callers who pledged their assistance with the boat rescue effort.



Photo by Joel Courtney/LDWF Public Information



Photo by Joel Courtney/LDWF Public Information

The general store for displaced LDWF employees offers everything from toiletries and baby needs to kitchen appliances, food and clothes.

The idea behind the store was to create a make-shift store consisting of donated items. The store would be available for displaced employees to come in and get what they need at no cost. This project was crucial because like so many people along the Gulf South, many department employees were left with nothing in Katrina's wake.

The department received thousands of donations from employees, organizations, businesses and generous individuals all over the country.

"We've had a great response with donations," said Linda Rivet, a committee member and 22-year department employee. "A television station in Minnesota held a donation drive and sent us a semi-truck full of brand new stuff. One of our co-workers had friends in from Chicago and they brought tons of stuff from their church. I was also contacted by a lady in Pennsylvania who makes handcrafted children's toys. She wanted to donate them as well. We didn't turn anything away."

Getting each of those donated items into the hands of an employee in need was the goal of the committee and the idea behind the creation of the store. The items were organized and placed in a secure storage unit on headquarter grounds. For individuals who could not make it to the store because they were without transportation or were displaced to cities outside of Baton Rouge, the needed items were shipped out to them.

"This was a large undertaking. We needed help unloading trucks of donated items and keeping things organized," said Rivet. "Without all the employees offering assistance, we couldn't have done it"

With Hurricane Rita battering the Western portion of Louisiana on the heels

of Katrina, the Employee Relief program is prepared to extend assistance to affected employees in those areas as well.

Rivet assures that though this all started with Katrina, "it will now extend west for our people affected by Rita."

Employee Relief Fund

As the donations came pouring in to assist displaced LDWF employees, not all of them were items such as food and clothing. There were a number of generous monetary donations as well. In order to manage these, an Employee Relief Fund has been established through the Wildlife and Fisheries Foundation.

The fund provides a method of accepting monetary donations to assist LDWF employees and their families who suffered losses from Hurricane Katrina. The funds will be used to assist with housing, clothing and other items lost as a result of the hurricane's devastation.

Like the general store, the donations to the Employee Relief Fund have come from all over and in varying amounts.

"We've received checks from Georgia, Utah, Tennessee, Texas, Kentucky, Mississippi, New Hampshire, Florida and South Carolina as well as the numerous donations from local businesses and organizations and our own employees," said Sandy Trahan, committee member and department employee. "We get everything from \$25 to \$2,500 donated."

Employees wishing to receive monetary assistance must submit an application in order to assess their level of need. This process has given insight into the tremendous losses incurred by LDWF employees in the storm-affected areas.

Photo by Adam Einck/LDWF Public Information



"It's devastating to read that lots of them have nothing left. There's severe water damage to homes, in some cases a total loss of property," said Trahan. "To talk to the people affected, you wish you could do more to help. The fund is at least a way to help get them back on their feet. It's a small something, but a way to show that we appreciate what they contribute to the department through their service."

In the days and weeks immediately following the storm, rescue workers from all over were stationed near rescue operation staging areas. Many rescuers sought brief periods of rest on mattresses in an auditorium at the headquarters building.

Many LDWF employees volunteered their time by preparing meals and coffee for the rescuers for when they returned to the building for much-needed rest.

"It was hard to get a handle on just how many rescuers were staying at the building during the early stages of the storm's aftermath," said Allatto. "They were dragging in very late and leaving very early. We washed towels and brought toiletries for them. We left signs out that there was food prepared in the kitchen. We wanted to do what we could for them because they were doing so much."

A New Appreciation

As the damages from Katrina are tallied, the overall magnitude of devastation has had a profound effect on many of the employees who gave their time and donations to the relief effort.

"Someone said to me, 'I just want a small place, just a little place that I can call my own and be alone.' When someone tells you that, you can do anything," said Rivet. "I'd go home at night and cry for their losses. I'd cry and then I'd get here the next day and get back at it. It's the very least I could do for them."

With so much being done to assist those in need, the response of LDWF employees vehemently helping one another fostered a sense of pride among co-workers.



Photo by Joel Courtney/LDWF Public Information

"The response of the employees didn't surprise me at all," said Thomas Gresham, Assistant Director of the department's Public Information Section, who manned phones at both the volunteer phone bank and at the Office of Emergency Preparedness (OEP). "I work with these people, so I wasn't surprised that basically everyone, without hesitation, was willing to do whatever he or she could do to help."

Trahan said, "To see so many employees rally together and want to help with food, clothing and money was amazing." "Everyone was saying, 'What can I do to help?' and they would do whatever was needed."

Allatto said, "We're like a family here and these are our people. We have a responsibility to our families to help them through these tough times."

Enforcement Lieutenant Colonel Keith LaCaze agrees, saying, "From the people answering phones at OEP to the people putting together the snack bags, we were very grateful. It was a total team effort."

Joel Courtney is the Audio/Visual Production Manager for LDWF. He has been with the department for six years.

Many LDWF employees from the hardest hit areas are displaced from their homes and offices. They are currently being housed in temporary residences and offices. Several New Orleans offices were combined into one conference room at the LDWF Baton Rouge location.

To make a donation to the LDWF Employee Relief Fund, contact Hibernia National Bank with the following account information: LDWF Employee Relief Fund (Louisiana Wildlife and Fisheries Foundation) or mail a check to Louisiana Wildlife and Fisheries Foundation, Attn: John Campbell, P.O. Box 2471, Baton Rouge, LA 70821. Designate on the check that it is for the LDWF Employee Relief Fund.

Rita inundated much of coastal Louisiana with flooding extending across the entire width of the state. Immediate impacts of the hurricane are largely limited to resident game species such as deer, rabbit, nutria, muskrat, and alligators and enumerable wildlife which occupy the lands and waters. In southwestern Louisiana, the storm surge approached 20 feet. Some direct species mortality was observed. However, the full impact can not be critically evaluated until better access and ground surveys can be made. The impact of the storm surge, flooding, and prolonged exposure to saltwater on the marshes has not yet been evaluated, but is expected to be significant.

In the coastal areas, initial deer mortality may not be as great as that which may occur in the next few months. Currently, deer have concentrated on the higher ridges. The availability of food could become limiting in some areas because of the combination of prolonged flooding and saltwater scalding. In many respects, the rabbit situation in coastal habitats is similar to that of deer. However, even within the immediate surge area, considerable debris was available to offer temporary refuge from floodwaters.

Waterfowl currently in the state are primarily migrant blue-winged teal and resident mottled and black-bellied whistling ducks. It is unlikely that these species experienced significant direct mortality. However, marsh waterfowl habitat has been severely impacted by extensive saltwater scalding and prolonged flooding. These factors will reduce availability of submergent and emergent vegetation that are important waterfowl foods.

As Hurricane Rita moved inland, it continued to impact wildlife habitat. However, unlike coastal areas where flooding had the greatest impact, the impact further inland was the result of high wind. Timber damage in many areas along the path of the storm was significant. Populations of some species will benefit from these changes and others will be hurt.

The Department has several refuges and wildlife management areas in the coastal and inland areas impacted by Rita. 350,000 acres of coastal areas, including Wisner WMA, Pointe-aux-Chenes WMA, Terrebonne Barrier Island Refuge, Atchafalaya Delta WMA, Marsh Island Refuge, State Wildlife Refuge, and Rockefeller Wildlife Refuge have been impacted. 260,000 acres of inland areas were impacted by the hurricane. Among them are Sabine Island WMA, located along the Louisiana - Texas border, which was the most severely impacted. Also impacted are Clear Creek, West Bay, Peason Ridge, and Ft. Polk WMAs.

Many of the buildings, equipment, and infrastructure on these areas have been damaged or destroyed. While the department has not yet been able to survey the habitat damage in many of these areas, it is apparent that significant damage to levees and water control structures has occurred.

Hurricanes Katrina and Rita have taken a tremendous toll on the citizens of Louisiana, Mississippi, Alabama, and Texas. Our initial focus is seeing to the safety and well being of its citizenry. However, as quickly as is feasible, more detailed assessments will be made of the impacts on the wildlife resources of the state.

RITA'S



WRATH STRIKES WILDLIFE, LANDS & FACILITIES



All photos by LDWF Wildlife.



At left, top to bottom: The West End Dorm at Rockefeller Refuge; visible erosion on the gulf shoreline at Rockefeller Refuge; headquarters building at State Wildlife Refuge.

Above, clockwise from left: Research and management station at Pointe-aux-Chenes; flooded headquarters at Marsh Island; dredging operation at Pass a Loutre; destroyed toolshed at Pass a Loutre.



RELIEF SUPPORT FLOWS IN FROM AROUND THE COUNTRY

DUE TO THE LARGE NUMBER of displaced employees within the department, a committee was set up to accept donated items for employee relief. The response from both within and outside of the department has been tremendous. Items have come from as close as Baton Rouge and as far away as Minnesota and Iowa.

Residents of Minneapolis, Minnesota, responding to a donation drive by KMSP Fox 9 radio station donated an 18-wheeler truckload of supplies transported by Egan Transport of Minnesota, and driven by Cheryl Neighbors from California. Arrangements for these supplies was made through University Methodist Church in Baton Rouge.

Iowa provided hundreds of handmade, fleece "Knots of Love" blankets. Lutheran Church of Our Savior in Baton Rouge has continued to provide boxes of items on a weekly basis. These donations have consisted of just about every imaginable item, some even packaged as starter kits, which makes "shopping" even more convenient.

The Outdoor Channel donated boxes of shirts, hats and stuffed animals. Not only has the response from the business sector been amazing, but LDWF employees have come out strong, providing not only donated items, but also their time by receiving, and sorting in the store. A big thanks to all those who have contributed their donations, time and effort.

Photo courtesy of the Governor's Office



In the face of Katrina's destruction, Governor Kathleen Babineaux Blanco shares a hopeful moment with evacuees.

ASSISTANCE FOR REGISTERED VESSEL OWNERS WITH BOAT LOSSES

THE LOUISIANA DEPARTMENT of Wildlife and Fisheries (LDWF) is helping vessel owners and their insurance companies to provide documentation required to file claims for boats lost during Hurricanes Katrina and Rita.

LDWF will provide free certified copies of boat registrations and will cancel registration records for which written documentation is received from the registered owner or the insurance company for lost, stolen or missing boats. Along with the written request for a certified copy or a cancellation, registered owners should provide a copy of their driver's licenses for identification purposes. This information may be faxed to 225/763-5421.

LDWF is taking a proactive approach to curtail fraud and theft by scrutinizing ownership documentation for new applications submitted to register boats that may have been affected by Hurricanes Katrina and Rita.

LDWF will work with the Office of the Attorney General and make every effort to protect the rights of legitimate boat owners. Registration transactions will not be allowed for salvaged, found or abandoned boats.

LDWF agents will investigate and file charges on anyone attempting an illegal transfer of a motorboat.

For more information, contact Captain Ronald Morris at 225/765-2469 or rmorris@wlf.louisiana.gov.



In the wake of Hurricane Katrina, Outback Steakhouse set up an on-site cook-out at the LDWF headquarters in Baton Rouge. During the seven-day cook-out, they prepared 30,000 meals around the clock. These meals were delivered to several field command centers between Baton Rouge and New Orleans, feeding rescuers, relief workers and volunteers. Thank you, Outback Steakhouse, for your delicious generosity.

WILDLIFE AND FISHERIES FOUNDATION CREATES LDWF EMPLOYEE RELIEF FUND

THE LOUISIANA WILDLIFE AND Fisheries Foundation has set up an account for the purpose of donating to LDWF employees and their families who have been displaced from their homes and have suffered losses as a result of Hurricane Katrina. This includes the many personnel and their families who worked in or around the New Orleans area.

Funds will be used to assist employees with housing, clothing and other items lost due to the hurricane.

Anyone who wishes to donate to the fund should contact Hibernia National

Bank with the following account information: LDWF Employee Relief Fund (Louisiana Wildlife and Fisheries Foundation) or mail a check to Louisiana Wildlife and Fisheries Foundation, Attn: John Campbell, P.O. Box 2471, Baton Rouge, LA 70821. Donors should designate on the check that it is for the LDWF Employee Relief Fund.

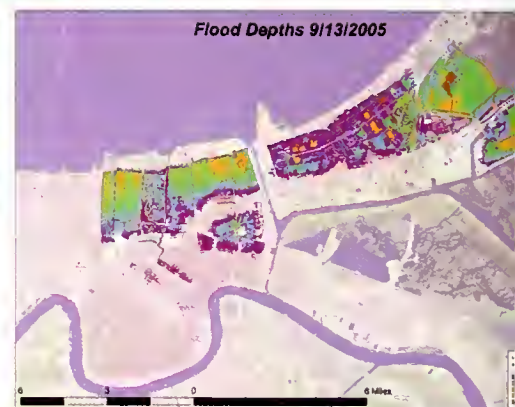
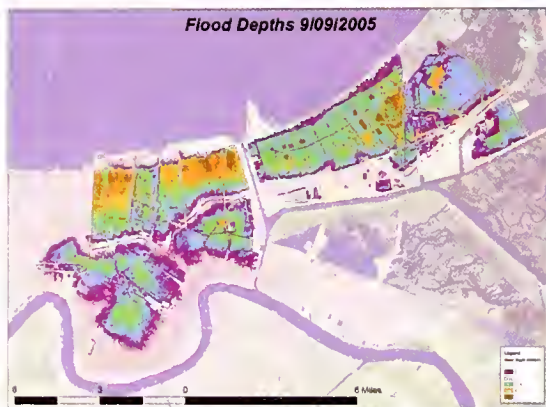
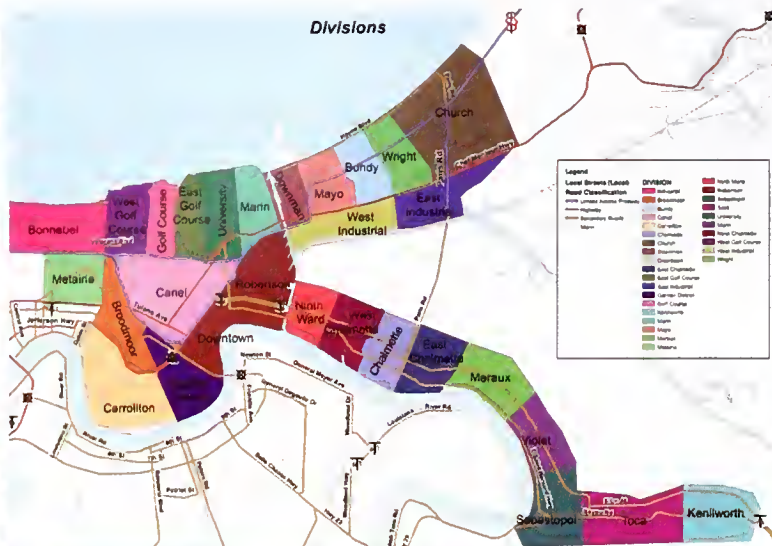
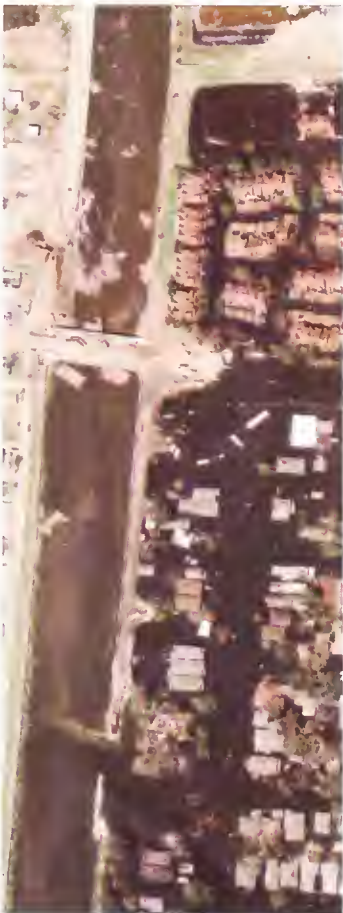
For more information, contact LDWF staff members Sandy Trahan at 225/765-2938 or strahan@wlf.louisiana.gov or Ruth Rigg at 225/765-2850 or rrigg@wlf.louisiana.gov.

Photo by Vaughan McDonald/ LDWF Marine Fisheries



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16. This statement will be printed in the Nov/Dec 2005 issue.
17. Jill Wilson, Editor
I certify that all information furnished in this statement is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on this form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including multiple damages and civil penalties).



Mapping it Out

In the hours and days after Hurricane Katrina hit coastal Louisiana, devastated roadways and neighborhoods seemed to disappear in the floodwaters and confusion. The search and rescue efforts faced a double dilemma in reaching stranded citizens: not only were many areas difficult to locate, but some were nearly impossible to reach. As an Information Technology Geographic Series Support Analyst for the Louisiana Department of Wildlife and Fisheries, Doug Albert's mapping skills became a valuable tool in regard to search and rescue efforts. Albert assisted in the creation of specialized maps of the greater New Orleans area which were then used to assess flood levels and to pinpoint emergency call locations.

Working with a group of other GIS specialists from the United States Geological Survey (USGS) and search and rescue teams from around the country, Albert helped supply maps identifying emergency call locations to FEMA and printouts of post-hurricane photography obtained by the USGS National Wetland Research Center (NWRC). They provided mapping support for the following entities: FEMA, U.S. Coast Guard, Center for Disease Control, U.S. Army, National Guard, New Orleans Fire Department, and numerous state and local urban search and rescue teams from around the country.

They produced detailed street maps used by the search and rescue teams conducting ground searches for Hurricane Katrina flood victims. Some of the GIS layers developed for maps included the following information: search and rescue divisions depicting the intensity of searches conducted throughout each division; open roads and boat access points; emergency call locations and priority of each call in each division; and flood maps depicting extent and depth of flooding.

Shown here at small scale and difficult to see in detail, the images on this page provide an example of the types of maps created for the relief effort. Left: Before and after photos of the levee break at the 17th Street Canal. (Courtesy of LandSat/U.S. Corps of Engineers and USGS) Top of page: Various maps created during search and rescue, showing divisions of the city and road accessibility. (Courtesy of USGS) The satellite photos just below these show flood depths on Sept. 9 and then on Sept. 13, when the waters had clearly receded. (Courtesy of USGS)

HURRICANE KATRINA EMERGENCY NUMBERS



American Red Cross

866.438.4636

for donations

800.HELP.NOW

U.S. Postal Service

(change of address)

800.ASK.USPS (800.275.8777)

www.usps.com

FEMA Assistance

800.621.FEMA

800.462.7585

www.fema.gov

Food Stamps and WIC

888.312.4567

888.524.3578

Lost Pets

Humane Society 800.HUMANE.1

Louisiana Pet Shelters 888.773.6489

Louisiana Disaster Recovery Foundation

877.HELP.LA.1 (800.435.7521)

www.louisianahelp.org

Locating Loved Ones

877.LOVED.1S (800.568.3317)

www.katrinasafer.com

Displaced Workers

866.783.5462

www.laworks.net

Part-time / Permanent Work

877.US.2.JOBS

877.889.5627

Louisiana Department of Social Services

888.LA.HELP.U (888.524.3578)

Volunteer Opportunities and Donations

www.usafreedomcorps.gov

Center for Disease Control and Prevention

800.CDC.INFO

888.232.6348

LDWF Employee Relief Fund

225-765-2938

www.ldwfreelief.org

Mail checks to:

La. Wildlife & Fisheries Foundation

Attn: John Campbell

P.O. Box 2471

Baton Rouge, LA 70821



Conserve. Protect. Replenish
www.louisiana.gov

Brown Pelican
Pelecanus occidentalis



The grand show is eternal. It is always sunrise somewhere; the dew is never dried all at once; a shower is forever falling; vapor is ever rising. Eternal sunrise, eternal dawn and gloaming, on sea and continents and islands, each in its turn, as the round earth rolls.

—John Muir

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